**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION IX**
**75 Hawthorne Street**
**San Francisco, CA 94105**

March 19, 2017

Mr. Anthony R. Brown
Environmental Manager
Atlantic Richfield Company
4 Centerpointe Drive, LPR 4-435
La Palma, CA 90623-1066

**Re: E PA Comments on Atlantic Richfield's Draft Final Focused Remedial Investigation Work Plan Amendment No. 12—Task Sampling and Analysis Plan for Hydrocarbon Investigation, Leviathan Mine Site, Alpine County, California, dated June 1, 2016**

Dear Mr. Brown,

EPA has completed its review of Atlantic Richfield Company's (ARC) June 1, 2016 Response to EPA Comments on the Draft On-Property Focused Remedial Investigation Work Plan Amendment No. 12 – Task Sampling and Analysis Plan for Hydrocarbon Investigation, Leviathan Mine Site, Alpine County, California (TSAP) and the Draft Final TSAP prepared on behalf of the Atlantic Richfield Company (ARC) by AMEC. The TSAP was provided in partial fulfillment of the requirements of the Statement of Work attached to the Administrative Order for Remedial Investigation and Feasibility Study (Unilateral Administrative Order), Comprehensive Environmental Response, Compensation, and Liability Act Docket No. 2008-18 issued by the U.S. Environmental Protection Agency (U.S. EPA) on June 23, 2008.

**Background:** The TSAP was prepared as an amendment to the August 2010 On Property Focused Remedial Investigation Work Plan. Investigation for hydrocarbon constituents in mine waste has not been previously performed at the site; however, during mine waste sampling in 2014 a black tar-like substance was observed in three hand auger boreholes. The first report of this tar-like substance and hydrocarbon smell was located at WP-003 on the southeast side of Pond 1. Nine boreholes surrounding WP-003 were sampled in which the tar like substance was observed. Through conversations with field staff and review of sampling records, two additional sampling locations were identified as possibly being affected by hydrocarbon contamination (WP-050 and WP-066).

EPA requested via electronic mail (email) on September 12, 2014, for ARC to conduct sampling and analysis from the area where the tar like substance was found. In an October 12, 2014 email, ARC's consultant noted that "Given the locations and depths at which the hydrocarbon like materials were observed, it is suspected that they may be associated with past mining operations and as such warrant additional consideration and planning in order to implement a defensible sampling program."

On February 26, 2016 ARC submitted a Sampling plan in response to EPA requests for characterization of the tar like substance to confirm that it was related to asphalt pavement and ensure that hazardous substances from hydrocarbons associated with mining activities are not present at the site.

On April 29, 2016, EPA provided comments on the TSAP and directed ARC to:

- sample at locations where the RWQCB have identified additional areas of former equipment maintenance activities and revise the DQO Summary Problem Statement to include sampling in these areas,
- Sample beyond the depth and spread of the sampling design plot if the extent of the hydrocarbon contamination is not defined by the current design, and
- Specify Acceptance Criteria for assessing the suitability for use of the data.

On June 1, 2016 ARC submitted a Response to Comments with a revised version of the TSAP.

In the interim, On November 4, 2016, ARC emailed the RWQCB and reported encountering soil potentially contaminated by hydrocarbon on September 6, 2016, during baseline soil sampling in support of the Revegetation Treatability Study. Work was stopped and the borehole was covered, but not backfilled, until they could return with field equipment. The email stated that after conducting investigations with a flame ionization detector (FID) and a photoionization detector (PID) on September 15, 2016, no significant detection of hydrocarbon was observed in the headspace of the sample. The email stated that "if the soil were affected by hydrocarbons in the past, the residuals are highly weathered as both of these readings are very low." The borehole was backfilled on September 23, 2016.

The RWQCB alerted EPA of the activity on November 7, 2016. Email correspondence between EPA and ARC regarding this incident was initiated by EPA on November 30, 2016. ARC responded with a summary of the activity; however, ARC notes that the RWQCB is the landowner; but fails to discuss why EPA wasn't informed as ARC agreed to in their June 1, 2016 Response to comments: "the US EPA will be notified, and the need for additional investigation can be determined at that time."

On March 17, 2017 ARC and EPA had a conference call to discuss the status of the TPH investigation. During this call, EPA restated its earlier comments and continued to request that a limited number of samples be collected in the maintenance and equipment areas. And discussed a 1950s photograph that was provided (Attached). ARC requested that EPA follow-up the call with written comments.

EPA has completed its review of the June 1, 2016 RTC and the revised TSAP. Some of the comments were adequately addressed (Attachment A) However, EPA finds that the responses to Comments 2, 5, and 6 are not inadequate:

- **EPA previous Comment 2: Section 6.4:** EPA requested that ARC expand the study area to include sites RWQCB has identified as previous maintenance or storage areas. **ARC's Response:** ARC stated that there is no documentation or evidence that petroleum products were used in these areas and it is not reasonable or necessary to collect and analyze samples for TPH. ARC noted that if evidence of suspected petroleum release become evident during field activities, "the US EPA will be notified, and the need for additional investigation can be determined at that time."

    - ***ARC's response fails to address EPA's concern.*** Lack of documentation does not suggest that petroleum or other products were not used at the site. Historical photographs (i.e. See attached photo 1) clearly document stacked drums along the side of the access road between Leviathan Mine Road and the current Aspen Seep entrance. As previously requested on April 29, 2016, and during our March 17, 2017 phone call, ARC shall investigate for the presence of TPH in this area with known historical maintenance activities. Please provide a sampling plan with a limited number of samples sufficient to investigate this area (ARC suggested approximately 20 samples). This work shall be completed during the 2017 field season.

- ***Failure to notify EPA***: ARC procedures stated that "the US EPA will be notified, and the need for additional investigation can be determined at that time." ARC failed to alert EPA when suspected petroleum product in soil was encountered during Revegetation Feasibility Study activities. EPA was not included on a November 4, 2016 email from Mr. Marc Lombardi of AMEC to Mr. Douglas Carey of the Regional Board. On November 30, 201, EPA requested additional information. ARC email on December 3, 2016, stated that they contaminated soil was investigated with a flame ionization detector (FID) and a photoionization detector (PID) with readings below 0.1 ppm and 1.4 ppm respectively, and "did not appear to warrant further investigation." EPA requests ARC ensure notification procedures are revised to ensure proper and timely reporting of field identified or suspected hydrocarbon-contaminated materials. Please provide a list of any other materials identified in the field, and recommend any additional field investigation to be added or the reasoning as to why additional field investigations are not needed. In addition, please provide a figure clearly showing the location of the encountered suspicious soil that was sampled.

- **EPA Previous Comment 5: Appendix A DQO Summary Problem Statement:** EPA requested that ARC expand the problem statement to include areas that were former equipment maintenance facilities, specifically the facility east of the Aspen Seep Bioreactor. **ARC's Response:** ARC directs EPA to its response to Comment 2. **EPA Comment:** *ARC's response is not adequate. See EPA's response above.*

- **EPA Previous Comment 6: Appendix A DQO Summary Step 6 Specify Acceptance Criteria:** EPA requested acceptance criteria such as spatial trends, exposure concentrations, etc. to inform professional judgment. **ARC's Response:** ARC has revised the DQOs to include acceptance criteria. The criteria outlined discusses the use of visual and olfactory examination of the soil along with FID scanning results. However, there is no threshold value for FID to identify what will merit additional investigation. **EPA Comment:** *EPA finds that the methodology for developing the acceptance criteria is sufficient, and directs ARC to provide a threshold value over which additional investigation of TPH presence is required. In addition, EPA requests ARC identify a threshold value for laboratory results.*

Within 30 days or by April 30, 2017; EPA directs ARC to provide a samplin g locations map within the historical equipment maintenance area (Fi gure 1), and a table showing the requested TPH thresholds for determining the need for additional investigation. Please also provide a schedule for completing this field sampling and associated reporting b y June 30, 2017.

Within 30 days, ARC shall provide a response that it concurs with EPA comments and will incorporate them as requested. Otherwise, should ARC find that they disagree, do not concur, or will not incorporate EPA comments, then ARC shall set up a meeting to discuss with EPA immediately to ensure that these submittals are complete, responsive and satisfactory.

If you have any questions, please feel free to contact me at (415) 947-4183 or Deschambault.lynda@epa.gov.

Sincerely,

Lynda Deschambault

Lynda Deschambault
Remedial Project Manager

Cc by electronic Email:
Douglas Carey, California Regional Water Quality Control Board, Lahontan Region
Micelle Hochrein, Washoe Tribe of Nevada and California
David Friedman, Nevada Department of Environmental Protection
Kenneth Maas, United States Forest Service
Tom Maurer, United States Fish and Wildlife Service Toby McBride,
United States Fish and Wildlife Service Steve Hampton, California
Department of Fish and Wildlife Marc Lombardi, AMEC

Photo 1: Work Area. Drums stored on site.


Figure 1: Approximate area containing former equipment sheds and drums based on photographs. Note that this area should be confirmed through brief reconnaissance, field inspection, and discussion with the property owner, Lahontan Regional Water Quality Control Board, prior to sampling.

EPA understands that approximately 20 samples may be required, but expects that more accurate identification of the area will assist in identifying the area, and the actual number, location, and depths of samples.

Attachment A (one page)

June 1, 2016 Response to EPA Comments on the Draft On-Property Focused Remedial Investigation Work Plan Amendment No. 12 – HISTORY OF ADEQUATE RESPONSES

- **Comment 1: Section 3.0:** EPA requested that ARC clarify footnote 1 which mentions that CERCLA's definition of "hazardous substance" does not include petroleum products. This seemed to imply that this was non-CERCLA work at a superfund site. EPA maintained its request to investigate potential hydrocarbon occurrences at the site to determine if petroleum related hazardous substances have been released. **ARC's Response:** ARC stated that ARC is performing this investigation as part of the RI/FS component of CERCLA in addition to EPA's request. ARC's intention of footnote 1 was to clarify why TPH had not been previously investigated at the site (outside of COCs in the SOW). **EPA Comment:** *ARC's response is adequate.*

- **Previous Comment 3: Section 6.4:** EPA requested additional text in the sampling plan that identified how to proceed if hydrocarbons were detected at the deepest sampling location. For example if hydrocarbons are present in the deepest and farthest step out sample, ARC should collect an additional deeper and/or lateral sample to assess the extent of contamination. **ARC's Response:** The text was revised to include 1-foot bgs interval sampling if in the 2-3 foot bgs sample hydrocarbon presence was detected. The interval sampling will continue until visual, olfactory, and FID indicators are not detected. In addition secondary step-out sampling would occur. **EPA Comment:** *ARC's response is adequate.*

- **RTC Comment 4: Table 2:** EPA requested an additional column identifying the location of MS/MSD samples. **ARC's Response:** ARC included identification of MS/MSD sample locations. **EPA Comment:** *ARC's response is adequate.*

- **RTC LRWCB Comment 1: Page 2, Section 3.0 second paragraph, third sentence**: LRWQCB requested clarification if the mention of a lack of surface discoloration should be attributed to the first location and not the second. **ARC's Response:** ARC revised the text to clarify the location/depth at which no discoloration was observed. **EPA Comment:** *ARC's response is adequate.*

- **RTC LRWCB Comment 2: Page 5, Section 6.4 first paragraph, second sentence**: LRWQCB requested additional deeper samples to be collected if hydrocarbon contamination is suspected in the 2-3 foot sample. RWQCB requested that the additional sampling depth be extended to the full vertical extent of the contamination. **ARC's Response:** ARC added text to state that an attempt would be made to collect samples from greater depths until neither visual, olfactory, nor FID scans indicate that hydrocarbons are not present. **EPA Comment:** *ARC's response is adequate.*

- **RTC LRWCB Comment 3: Page 6, Section 6.4 second paragraph, last sentence**: LRWQCB requested that the complete determination of the horizontal and vertical extent of the hydrocarbon contamination. **ARC's Response:** ARC has revised the text to clarify the procedures to determine the horizontal and vertical extent of hydrocarbon contamination, if present. **EPA Comment:** *ARC's response is adequate.*